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ON THE

MAMMOTH

OR

FOSSIL ELEPHANT,

FOUND IN THE ICE,

AT

THE MOUTH OF THE RIVER LENA, IN SIBERIA.

WITH A LITHOGRAPHIC PLATE OF THE SKELETON.

From the Fifth Volume of the Memoirs of the Imperial Academy of Sciences
of St. Petersburg.

LONDON:
PRINTED AND PUBLISHED BY WM. PHILLIPS, GEORGE-YARD, LOMBARD-STREET.
1819.

ADVERTISEMENT.

THE following pages are translated and abridged from a paper by Dr. Tilesius in the Memoirs of the Petersburg Academy, and the figure of the skeleton is faithfully copied on stone, but of a reduced size, from the large plate which accompanies it.

The term 'Mammoth or fossil Elephant' has been made use of in the title page with a view to correct a common mistake in the application of the word *mammoth,* which is in England frequently given to the Mastodon of Cuvier, the animal of which the remains are chiefly found on the banks of the Ohio and in other parts of America. The Siberians have long applied the name of "Mammoth" to the Elephant whose bones are very abundant in that country, and in many other parts of the world, and it is so used by writers on the continent. These remains, wherever found, belong to a species of Elephant different from the two now living on the globe, and which is called by Cuvier 'the fossil Elephant:' but the propriety of applying the term *fossil* to the subject of the following memoir may perhaps be doubted; for although it is of the same species, it was not found beneath the surface of the earth, but in ice, and retained its flesh and all its softer parts in a state of perfect freshness.

A very complete dissertation on the fossil and living Elephants by M. Cuvier, is inserted in the eighth volume of the *Annales du Museum d'Histoire Naturelle,* and has been re-published in his *Recherches sur les Ossemens fossiles de Quadrupèdes.*

ON THE

MAMMOTH OR FOSSIL ELEPHANT, &c.

ACCORDING to several writers, the term Mammoth is of Tatar origin, and is derived from *mama*, which signifies the earth,* and the natives of Siberia give the name of 'bones of the Mammoth' to the remains of Elephants which are found in great abundance in that country, believing that the Mammoth is an animal which lives underground at the present time.

The Mammoth or Elephant's bones and tusks, are found throughout Russia, and more particularly in Eastern Siberia and the Arctic marshes. The tusks are found in great quantities and are collected for the sake of profit, being sold to the turners in the place of the living ivory of Africa and the warmer parts of Asia, to which it is not at all inferior.

Almost the whole of the ivory-turner's work made in Russia is from the Siberian fossil ivory, and sometimes the tusks, having hitherto always been found in abundance, are exported from thence, being less in price than the recent. Although for a long series of years, very many thousands have been annually obtained, yet they are still collected every year in great numbers on the banks of the larger rivers of the Russian empire, and more particularly those of further Siberia. They abound most of all in the Laichovian Isles and on the shores of the Frozen Sea. In digging wells or foundations for buildings there are every where discovered the entire skeletons of Elephants, which are very well preserved in the frozen soil of that country. The instances of these bones being found in the above mentioned regions, and their great numbers, are so frequently stated by Russian travellers, that it may be fairly contended that the number of Elephants now living on the globe is greatly inferior to the number of those whose bones are remaining in Siberia.

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* According to others it is derived from *behemoth* mentioned in the book of Job, or *mehemoth* an epithet which the Arabs commonly add to the word Elephant to designate one which is very large. See Cuvier Ann. du Mus. vol. 8, p. 45.

It is particularly to be noticed, that in every climate and under every latitude, from the range of mountains dividing Asia, to the frozen shores of the Northern Ocean, Siberia abounds with Mammoth bones. The best fossil ivory is found in the countries near to the Arctic circle, and in the most eastern regions, which are much colder than the parts of Europe under the same latitude, and where the soil in their very short summer is thawed only at the surface, and in some years not at all.

I recommend those of my readers who wish for more detailed accounts of the skeletons of Elephants and other large animals, such as the gigantic Buffalo and Rhinoceros found in different parts of Siberia, and particularly of the immense quantity of their bones, to consult the dissertations of the celebrated Pallas in the "Nova Commentaria Petropolitana." They are entitled "De Ossibus Siberiæ Fossilibus," and "De Reliquiis animalium exoticorum per Asiam borealem repertis."

In the year 1805, when the Russian expedition under Krusenstern returned for the third time to Kamschatka, Patapof, master of a Russian ship bringing victualling stores from Okhotsk, related that he had lately seen a Mammoth Elephant dug up on the shores of the Frozen Ocean, clothed with a hairy skin; and shewed, in confirmation of the fact, some hair three or four inches long of a reddish black colour, a little thicker than horse hair, which he had taken from the skin of the animal: this he gave to me, and I sent it to Professor Blumenbach. No further knowledge has been obtained on this subject, and unfortunately Patapof was not employed by any of our Societies to return to Siberia. Thus has this curious fact been consigned to oblivion; nor should we now possess any information respecting the carcase of the Mammoth, which forms more particularly the subject of this memoir, if the rumour of its discovery had not reached Mr. Adams, a man of great ardour in pursuit of science, who undertook the labour of a journey to these frozen regions, and of preparing these gigantic remains and transporting them to a great distance.

The preservation of the flesh of the Mammoth through a long series of ages, is not to be wondered at, when we recollect the constant cold and frost of the climate in which it was found. It is a common practice to preserve meat and berries through the winter by freezing them, and to send fish, and all other provisions annually at that period from the most remote of the northern provinces, to St. Petersburg and other parts of the Empire.

The following interesting account is given by Gmelin of the depth to which the ground is thawed in summer (Floræ Sibericæ, pref. p. xlvii.) 'At 'Jakutsk on the 8th of June, I ordered the ground to be dug in an elevated field, 'as deep as it was thawed. The mould extended to the depth of eleven inches; 'underneath it was sand, which was soft to the depth of two feet and a half, when 'it became harder; and after digging half a foot lower, it was very hard and 'scarcely yielded to the spade, so that the ground was thawed scarcely four feet. 'I directed the same experiment to be tried at a lower spot not far distant. The 'mould was ten inches deep, the soft sand two feet four inches, but below this 'every thing was frozen quite hard. Moreover, various berries which the Jakutski 'consider as delicacies may be preserved in caves in the same state, that is, continually frozen, although the caves are scarcely the depth of six feet.'

I shall now proceed to the account which Mr. Adams has published of his journey to the Icy Sea, and to the place where the carcase of the Mammoth whose skeleton is now to be seen in our Museum, was found lying on the sand and ice. It was first published in the Journal du Nord, printed at St. Petersburg in 1807, under the title of "Relation abrégé d'un Voyage à la mer Glaciale, et decouverte des restes d'un Mammouth," and afterwards in some German ephemerides, but as they are now scarce, I shall cite his own words.

'I should reproach myself if I longer delayed the publication of a 'zoological discovery, which is highly interesting in its detail since it makes 'us acquainted with a species of animal whose existence was a subject of dispute 'among our best informed naturalists.

'I was told at Jakutsk by the merchant Popoff, chief of the body 'of merchants of that town, that there had been discovered on the shores of the 'Frozen Ocean near the mouth of the river Lena, an animal of extraordinary 'magnitude. The flesh, the skin, and the hair, were in a state of preservation; 'and it was supposed that the fossil production known under the name of Mammoth's horns, must have belonged to an animal of this species. Mr. Popoff, 'had at the same time the kindness to present me with a drawing and description 'of this animal, and I thought it right to send them both to the President of the 'Academy of Petersburg.* The news of this interesting discovery determined 'me to hasten the journey which I had in contemplation for the purpose of 'visiting the shores of the Lena as far as the Frozen Ocean; wishing to preserve these precious remains which might otherwise be lost. My stay at 'Jakutsk consequently did not last many days; I set off on the 7th of June, '1806, furnished with some necessary letters, of which part were for the agents 'of government and the merchants whose assistance I thought would be useful 'in my researches. On the 16th of June I arrived at the little town of Schigansk, 'and towards the end of this same month I was at Kuma-Surka; from thence I 'made a particular excursion of which the Mammoth was the object, and I will 'now relate what my journal contains on that subject.†

'The contrary winds which had prevailed during the whole summer, 'delayed my departure from Kuma: this place was then inhabited by forty or 'fifty Tungusian families, who were generally employed in fishing, &c.

'The wind having at length changed, I determined to pursue my journey, 'and passed my rein-deer across the river. The next day at sun rise I set off, 'accompanied by the Tungusian chief Ossip Schumachof, the merchant of 'Kuma-Surka, Belikoff, my hunter, three Kossaks, and ten Tungusians. The 'Tungusian chief was the person who had first discovered the Mammoth, and 'who was proprietor of the territory through which our route lay. The merchant 'of Kuma-Surka had passed almost all his life on the shores of the frozen sea; 'his zeal and the advice he gave me have the strongest claim to my gratitude, 'and I even owe to him the preservation of my life in a moment of danger.

'We passed in our way over high steep mountains, vallies which 'followed the course of small brooks, and dry and wild plains, where not a shrub

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* Telesius says these are both preserved in the Academy but describes the drawing as very bad, representing a pig rather than an elephant, with red hair on the back. He says that the description was quite worthy of the drawing.

† Some parts of this account not immediately relating to the object in view are here omitted.

'was to be seen. After two days travelling we arrived at the shores of the 'Frozen Ocean. The Tungusians called it Angardam or Terra Firma. To 'reach the Mammoth we were obliged to traverse a peninsula called Byschofskoy-'Mys or Tamut. This peninsula, which stretches into a spacious gulf, is on the 'right of the mouth of the Lena, and extends, as I was informed, from south-'east to north-west for the length of 80 wersts, (about 53 miles). The name is 'probably derived from two points like horns, which are at the northern end of 'the promontory. The point on the left, which the Russians more especially call 'Byschofskoy-Mys on account of its greater extent, forms three large gulfs, 'where are some Jakutsk settlements: the opposite point, called Manstai, on 'account of the great quantity of floating wood found on its shore, is of half the 'size; the bank is lower, and this canton is completely inhabited. The distance 'from one point to the other is reckoned at 45 wersts (30 miles). Hills form the 'more elevated part of the peninsula of Tamut. The rest is occupied by lakes, 'and all the low lands are marshy, &c.

'The peninsula of which we have just spoken, is so narrow in some 'places that the sea is seen on both sides. The rein-deer migrate every year 'regularly, abandoning these places to proceed by the frozen sea towards Bor-'chaya and Nytjansk, and for this purpose they assemble in large troops towards 'the autumn.* To follow the chase of these animals with greater success, the 'Tungusians have divided all the country of this peninsula into departments sepa-'rated by paling. They alarm the rein-deer by loud cries, and by dogs which 'pursue them. The rein-deer frightened by this noise run into the inclosures of 'the palings, where they are easily taken; all those which try to escape on the 'ice are shot by the hunters.

'The third day of our journey we pitched our tents at some hundred 'paces distant from the Mammoth, on a hill called Kembisaga-Shaeta.

Schumachof related to me nearly in these terms the history of the discovery of the Mammoth.

'The Tungusians, who are a wandering people, remain but a little 'time in the same place. Those who live in the forests often take ten years or 'more to travel over the vast regions between the mountains, during this time

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* Sauer Beschreibung der Billingschen Reise, p. 130.

‘they do not once return to their habitations. Each family lives isolated and knows no other society. If, during the course of several years two friends meet by chance, they then communicate to each other their adventures, their different successes in hunting, and the number of skins they have obtained. After having passed some days together, and consumed the few provisions they had, they separate chearfully, carrying each others compliments to their acquaintance, and trusting to Providence for another meeting. The Tungusians inhabiting the coast differ from the former in having more regular and fixed habitations, and in collecting together at certain seasons for fishing and hunting. During winter they inhabit cottages built side by side, so that they form villages.

‘It is to one of these annual trips that we owe the discovery of the Mammoth. Towards the end of the month of August, when the fishing season in the Lena is over, Schumachof generally goes with his brothers to the peninsula of Tamut, where they employ themselves in hunting, and where the fresh fish of the sea offer them a wholesome and agreeable food. In 1799 he had constructed for his wife some cabins on the banks of the lake Oncoul, and had embarked to seek along the coasts for Mammoth horns. One day he perceived among the blocks of ice a shapeless mass, not at all resembling the large pieces of floating wood which are commonly found there. To observe it nearer, he landed, climbed up a rock and examined this new object on all sides, but without being able to discover what it was.

‘The following year (1800), he found the carcase of a walrus (*Trichecus Rosmarus.*) He perceived at the same time that the mass he had before seen was more disengaged from the blocks of ice, and had two projecting parts, but was still unable to make out its nature. Towards the end of the following summer (1801) the entire side of the animal and one of his tusks, were quite free from the ice. On his return to the borders of the lake Oncoul, he communicated this extraordinary discovery to his wife and some of his friends; but the way in which they considered the matter filled him with grief. The old men related on the occasion their having heard their fathers say, that a similar monster had been formerly seen in the same peninsula, and that all the family of the person who discovered it had died soon afterwards. The Mammoth was, in consequence, unanimously considered as an augury of future calamity, and the Tungusian chief was so much alarmed that he fell seriously ill;

‘but becoming convalescent, his first idea was the profit which he might obtain by selling the tusks of the animal, which were of extraordinary size and beauty. He ordered that the place where the Mammoth was found should be carefully concealed, and that strangers should, under different pretexts, be diverted from it, at the same time charging trust-worthy people to watch that the treasure was not carried off.

‘But the summer of 1802, which was less warm and more windy than common, caused the Mammoth to remain buried in the ice, which had scarcely melted at all. At length, towards the end of the fifth year, (1803), the ardent wishes of Schumachoff were happily accomplished; for the part of the ice between the earth and the Mammoth having melted more rapidly than the rest, the plane of its support became inclined, and this enormous mass fell by its own weight on a bank of sand. Of this, two Tungusians, who accompanied me, were witnesses.

‘In the month of March, 1804, Schumachof came to his Mammoth, and having cut off his horns (the tusks) he exchanged them with the merchant Bultunof for goods of the value of 50 rubles. At this time a drawing was made of the animal, but very incorrect,* for it gave him pointed ears, very small eyes, horses hoofs, and bristles all along the back, so that it represented something between a pig and an elephant.

‘Two years afterwards, or the seventh after the discovery of the Mammoth, I fortunately traversed these distant and desert regions, and I congratulate myself in being able to prove a fact which appears so improbable. I found the Mammoth still in the same place, but altogether mutilated. The prejudices being dissipated because the Tungusian chief had recovered his health, there was no obstacle to prevent approach to the carcase of the Mammoth; the proprietor was content with his profit from the tusks, and the Jakutski of the neighbourhood had cut off the flesh with which they fed their dogs during the scarcity. Wild beasts, such as white bears, wolves, wolverenes, and foxes also fed upon it, and the traces of their footsteps were seen around. The skeleton, almost entirely cleared of its flesh, remained whole, with the exception of one fore leg.[*] The spine from the head to the os coccygis,[†] one scapula, the basin, and the other three extremities were still held together by the ligaments and by parts of the skin. The head was covered with a dry skin; one of the ears, well preserved,[‡] was furnished with a tuft of hairs.

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* This is the drawing before mentioned, page 8, note.

'All these parts have necessarily been injured in transporting them a distance of 11,000 wersts (7,330 miles.) Yet the eyes have been preserved and the pupil of the left eye can still be distinguished.[§] The point of the lower lip had been gnawed, and the upper one having been destroyed, the teeth could be perceived. The brain was still in the cranium but appeared dried up.

'The parts least injured are one fore foot and one hind foot; they are covered with skin, and have still the sole attached. According to the assertion of the Tungusian chief the animal was so fat and well fed that its belly hung down below the joints of the knees. This Mammoth was a male, with a long mane on the neck, but without tail or proboscis.[||] The skin, of which I possess three-fourths, is of a dark grey colour, covered with a reddish wool and black hairs. The dampness of the spot, where the animal had laid so long, had in some degree destroyed the hair. The entire carcase of which I collected the bones on the spot, is four archines (9 ft. 4 in.) high, and seven archines (16 ft. 4 in.) long from the point of the nose to the end of the tail, without including the tusks, which are a toise and a half[¶] in length; the two together weighed 360 lb. avoirdupois; the head alone, without the tusks, weighs 11 poods and a half (414 lb. avoirdupois.)

'The principal object of my care was to separate the bones, to arrange them, and put them up safely, which was done with particular attention. I had the satisfaction to find the other scapula, which had remained not far off. I

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[*] This has been restored in plaster of Paris from the other side.

This is an error, as of 28 or 30 caudal vertebræ only 8 are remaining.

[‡] The ears are not well preserved, but may perhaps have suffered in so long a carriage.

[§] A dried substance is visible, but it is not certain whether it is the pupil of the eye.

[||] The places of the insertion of the muscles of the proboscis are visible on the skull, it was probably devoured as well as the end of the tail.

[¶] 9 ft. 6 in. measuring along the curve. The distance from the base or root of the tusk to the point is 3 ft. 7 in.

‘ next detached the skin of the side on which the animal had lain, which was well ‘ preserved. This skin was of such extraordinary weight that ten persons found ‘ great difficulty in transporting it to the shore. After this I dug the ground ‘ in different places to ascertain whether any of its bones were buried, but ‘ principally to collect all the hairs* which the white bears had trod into the ‘ ground while devouring the flesh. Although this was difficult from the want of ‘ proper instruments, I succeeded in collecting more than a poud (36 pounds) ‘ of hair. In a few days the work was completed, and I found myself in possession of a treasure which amply recompensed me for the fatigues and dangers of ‘ the journey, and the considerable expenses of the enterprize.

‘ The place where I found the Mammoth is about 60 paces distant from ‘ the shore, and nearly 100 paces from the escarpment of the ice from which it ‘ had fallen. This escarpment occupies exactly the middle between the two ‘ points of the Peninsula, and is three wersts long, (two miles), and in the place ‘ where the Mammoth was found, this *rock* has a perpendicular elevation of 30 or ‘ 40 toises. Its substance is a clear pure ice; it inclines towards the sea; its top ‘ is covered with a layer of moss and friable earth, half an archine (14 inches) in ‘ thickness. During the heat of the month of July a part of this crust is melted, ‘ but the rest remains frozen. Curiosity induced me to ascend two other hills at ‘ some distance from the sea; they were of the same substance and less covered ‘ with moss. In various places were seen enormous pieces of wood of all the ‘ kinds produced in Siberia; and also Mammoth's horns in great numbers ‘ appeared between the hollows of the rocks; they all were of astonishing ‘ freshness.

‘ How all these things could become collected there, is a question ‘ as curious as it is difficult to resolve. The inhabitants of the coast call this ‘ kind of wood *Adamschina,* and distinguish it from the floating pieces of ‘ wood which are brought down by the large rivers to the ocean, and collect in ‘ masses on the shores of the frozen sea. The latter are called *Noachina.* I ‘ have seen, when the ice melts, large lumps of earth detached from the hills, ‘ mix with the water, and form thick muddy torrents which roll slowly towards ‘ the sea. This earth forms wedges which fill up the spaces between the blocks ‘ of ice.

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* On the arrival of the skin at Petersburgh it was totally devoid of hair.

'The escarpment of ice was 35 to 40 toises high; and, according to the 'report of the Tungusians, the animal was, when they first saw it, seven toises 'below the surface of the ice, &c.

'On arriving with the Mammoth at Borchaya, our first care was to separate the remaining flesh and ligaments from the bones which were then 'packed up. When I arrived at Jakutsk, I had the good fortune to re-purchase 'the tusks, and from thence expedited the whole to St. Petersburg."

The skeleton is now put up in the Museum of the Academy, and the skin still remains attached to the head and the feet.

The Mammoth is described by M. Cuvier as a different species from either of the two Elephants living at the present day, the African or the Indian. It is distinguished from them by the teeth, and by the size of the tusks, which are from ten to fifteen feet long, much curved, and have a spiral turn outwards. The alveoli of the tusks are also larger and are produced farther. The neck is shorter, the spinal processes larger, all the bones of the skeleton are stronger, and the scabrous surfaces for the insertion of the muscles more prominent than in the other species. The skin being covered with thick hair, induces M. Cuvier to consider that it was the inhabitant of a cold region. The form of the head is also different from that of the living species, as well as the arrangement of the lines of the enamel of the teeth: but for these and other particulars, see the memoirs of M. Cuvier in the Annales du Museum d'Histoire Naturelle.

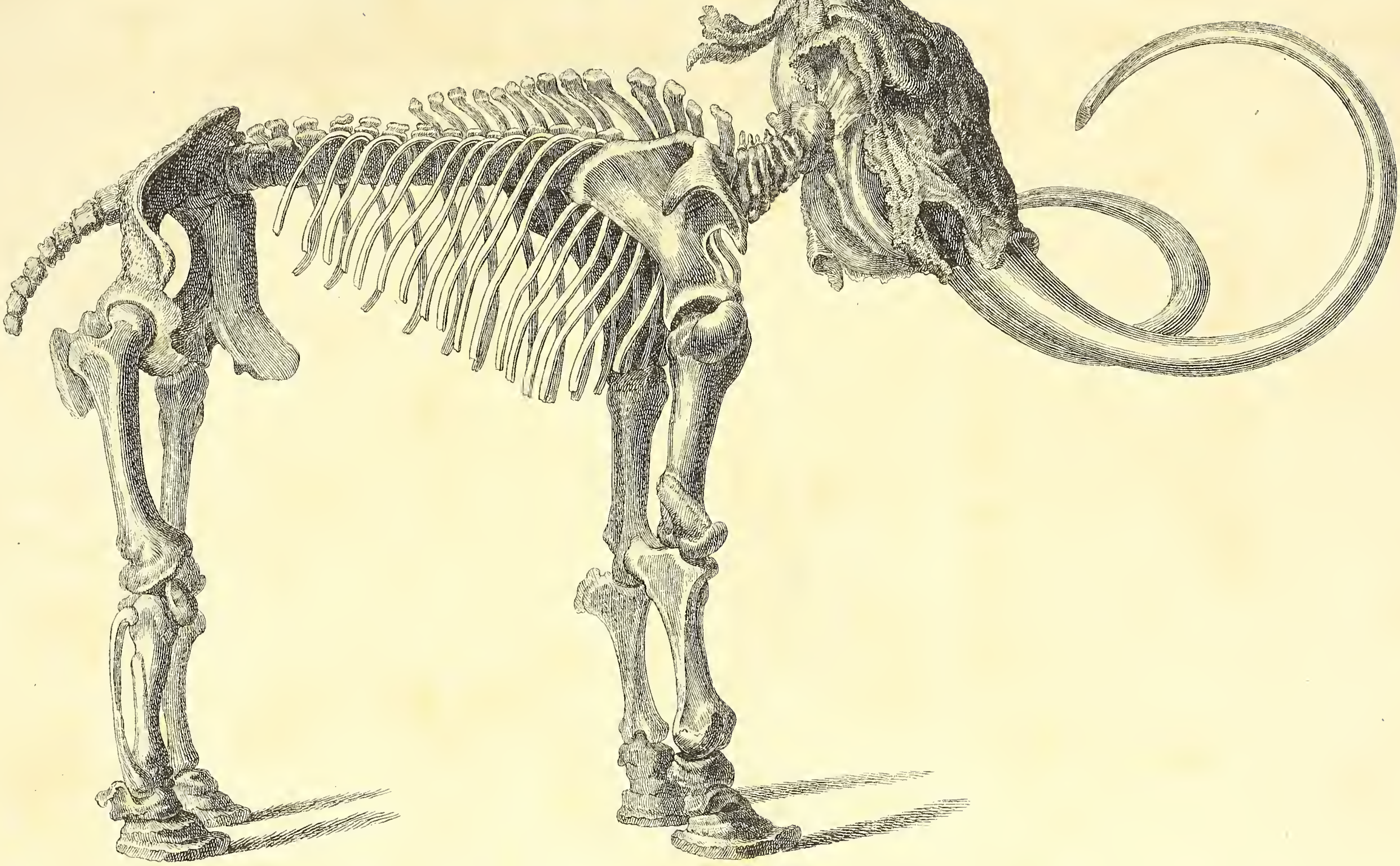
The Mammoth more nearly resembles the Indian than the African species of Elephant.

A part of the skin and some of the hair of this animal were sent by Mr. Adams to Sir Joseph Banks, who presented them to the Museum of the Royal College of Surgeons. The hair is entirely separated from the skin, excepting in one very small part, where it still remains firmly attached. It consists of two sorts, common hair and bristles, and of each there are several varieties, differing in length and thickness. That remaining fixed on the skin is of the colour of the camel, an inch and an half long, very thick-set, and curled in locks. It is interspersed with a few bristles, about three inches long, of a dark reddish colour.

Among the separate parcels of hair are some rather redder than the short hair just mentioned, about four inches long, and some bristles nearly black, much thicker than horse hair, and from 12 to 18 inches long.

The skin when first brought to the Museum was offensive. It is now quite dry and hard, and where most compact is half an inch thick. Its colour is the dull black of the living Elephants.

W. Phillips, Printer,
George Yard, Lombard Sttreet London.



Drawn on Stone by G. Scharf

Printed by F. Moser 4 Cromer Street

Mammoth or Foſsil Elephant found in Siberia.